



Second semester newsletter
Edition 4



COLLABORATION : A CATALYST FOR OUR EMERGENCE





Covers work done from July–December 2021

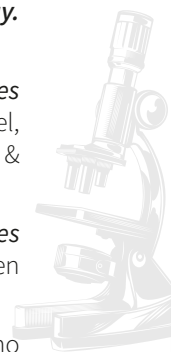


Scientific Publications

It is irrelevant to talk about Science and scientists without mentioning scientific publications. In research, publishing frequently is considered a prerequisite to career progression. It is seen as a significant sign of dynamism and competence. From July to December 2021, CRID researchers have demonstrated this skills with several scientific publications.

List of Publication for 2nd Semester:

-  *The cytochrome P450 CYP325A is a major driver of pyrethroid resistance in the major malaria vector Anopheles funestus in Central Africa.* Amelie N.R.Wamba, Sulaiman S.Ibrahim, Michael O.Kusimo, AbdullahiMuhammad, Leon M.J.Mugenzi, HelenIrving, Murielle J.Wondji, JackHearn, Jude D.Bigoga. ***Insect Biochemistry and Molecular Biology.*** 14 September 2021
-  *Molecular detection and maternal transmission of a bacterial symbiont Asaia species in field-caught Anopheles mosquitoes from Cameroon.* Claudine Grâce Tatsinkou Maffo, Maurice Marcel Sandeu, Amen Nakebang Fadel, Magellan Tchouakui, Daniel Nguiffo Nguete, Benjamin Menze, Michael O. Kusimo, Flobert Njiokou, Grant L. Hughes & Charles S. Wondji. ***Parasites and vectors.*** 17 October 2021
-  *Multi-omics analysis identifies a CYP9K1 haplotype conferring pyrethroid resistance in the malaria vector Anopheles funestus in East.* Jack Hearn, Carlos Djoko Tagne, Sulaiman S. Ibrahim, Billy Tene-Fossog, Leon J. Mugenzi, Helen Irving, Jacob M. Riveron, G.D. Weedall, C.S. Wondji. ***BioRxiv.*** 21 October 2021
-  *Concurrent circulation of dengue serotype 1, 2 and 3 among acute febrile patients in Cameroon.* Huguette Simo Tchegnna, Francine Sado Yousseu, Basile Kamgang, Armel Tedjou, Philip J. McCall, Charles S. Wondji. ***PLOS Neglected Tropical Diseases.*** 25 October 2021



Employee Milestone

Additions were made to CRID's team

During the second semester of the year 2021, CRID added its human resource. New staff joined the centre at different levels. A total of eleven (11) persons joined the team .

MSc student: Ornella DJIEMO, Auriane NZUEMI, Viviane ONGBASSOBEN, Raissa NFINI

Lab Interns: Inès WATSOP, Jonathan CHEDJOUN, Jalil MEGNA, Junior SAMBA

Internal control: Ngala Muyu Nadège,

Biomedical engineer: Kom Djilo Cédric

Cleaning agent: Bokali Jean

Capacity Building at CRID

Capacity building is also considered as capacity development or capacity strengthening. It is an intervention used to strengthen ability of CRID researchers to fulfil their

mission by promoting dedication and professionalism towards achieving results. Capacity building programs has been carried out in various ways.

PAMCA CONFERENCE: Highlighting the need to think critically



This 6-7 July 2021, the Pan-African Mosquito Control Association (PAMCA)-Cameroon chapter, hosted its second annual conference at the Red Cross Conference

Hall, Yaounde, Cameroon, under the theme: "Strengthening capacities for integrated control of vector borne diseases". The CRID researchers and students were involved in various activities. They actively contributed to the success of the conference. This year, Pamca-Cameroon chapter highlights the need to think critically about daily actions and quality of research. 122 participants, 8 institutions, 7 universities participated. CRID came out with 4 prizes. Ngongang Sonia Received the 1st prize for oral presentation and the 2nd prize for the 180 seconds thesis presentation ; Ngannang Brigitte received the 1st prize for the best Poster presentation ; Binyang Jerome Binyang received the 3rd prize for Oral presentation. The next conference is schedule to take place in Douala, Cameroon.



Public engagement

Public engagement is known in a variety of sectors, from arts to heritage; from science policy to local government. It describes the diversity of ways in which the activity and benefits of higher education and research can be shared with the public. CRID has chosen to engage with the wider public and the media. The main objective here is to inform, to educate different groups about the results of researches, to empower the audience to contribute to ongoing public debates and give them many more reasons to support research, developments, discoveries and ideas.



CRID-PAMCA workshop

This training took place at Mbalmayo, Centre Region of Cameroon, from 2nd -13th August 2021. It was designed to strengthen the capacity of the personnel of Ministry of Health. The town of Mbalmayo, located in the Center Region, hosted this 12 days working session. In total, 15 participants representing the 10 regions of Cameroon took part in this training. The workshop was organised in collaboration with the Pan-African Mosquito Control Association (PAMCA), the Bill and Melinda Gates Foundation (BMGF) and the National Malaria Control Program (NMCP) under the theme: “Strengthening local capacity for malaria surveillance and elimination in Africa”.

PhD and Master thesis defense

Christophe Keumeni earned a Master degree



On September 21, 2021 within the context of a research project in partial fulfilment of the award of a Master’s degree in Animal Biology and Physiology, Christophe Keumeni carried out and presented his study intitled “*Insecticide resistance profile and the distribution of arbovirus vectors in the city of Douala*”. The jury, made up of lecturers from the Department of Animal Biology and Physiology of the University of Yaoundé I, approved the scientific nature of his work. Christophe’s research was mentored and financed by CRID.

Derrick Fofié grabbed a Master degree



Derrick Fofié, a CRID student and candidate to the Master degree programme at the University of Yaounde I presented his work entitle “*Study of the dynamics of malaria transmission in Elende, central Cameroon*” as part of his Master’s dissertation in animal biology and physiology in Cameroon. It was on September 21, 2021, the aim of his study was to determine the abundance and composition of the major malaria vectors present in the area as well as study their behavior and disease transmission pattern.

Tekoh Theofelix defended a Master Thesis



“*The role of the Cytochrome P450 gene CYP6P9a and the 6.5 KB structural variation in Carbamate resistance in the major African malaria vector Anopheles Funestus S.S.*” is another Master dissertation study carried out by Tekoh Theofelix Anyerengu. Defended before the jury on October 27, 2021 at the University of Buea, Tekoh Theofelix’s research aimed at characterizing the resistance profiles and elucidating the underlying molecular bases for Carbamate resistance in Fumoz *Anopheles funestus* laboratory population.

Leon Mugenzi is now a Doctor



On October 26, 2021, at the University of Buea, the now called Dr Leon Mugenzi, a young rwandan, briantly defended his PhD thesis. His study entitled: “*Identification and detection of mutations involved in transcriptional regulation of genes mediating insecticides resistance in the major malaria vector Anopheles Funestus.*” This is a great achievement for him as a researcher at CRID and a great achievement for CRID as well whose vision is to train the next generation of African scientists. Dr Leon Mugenzi was co-supervised by Prof Charles Wondji, Professor of Genetics and Vector Biology at the Liverpool School of Tropical Medicine (LSTM), and the Executive Director of CRID.



Visits

IRD researchers visited CRID

Dr Frederick Simard, head of *Maladies Infectieuses et Vecteurs : Ecologie, Génétique, Evolution et Contrôle* (MIVEGEC) unit at Institut de Recherche pour le Développement (IRD); Dr Didier Fontenille, former Director of Institut Pasteur, Cambodia and Madagascar and now Director at IRD together with other colleagues from IRD visited CRID on October 29, 2021. After a general presentation of CRID, followed a brief presentation of the activities carried out by the various Principal Investigators, Post-doctoral researchers, laboratory and insectary managers, they visited the Insectary and the different laboratories of CRID. “Dr Didier is the one who introduced me in the research ecosystem” said Prof Charles Wondji, CEO of CRID. “If we are here right now, at this moment it is because he was there to lead us at that time” he added. It is a “great pleasure to be here at CRID, thanks for your warm reception” Frederick Simard said. After the round visit, they all expressed a positive impression.



Prof Sian Clarke from LSHTM visits CRID



On October 22, 2021, the Centre for Research in Infectious Diseases (CRID) received Prof Sian Clarke, Professor of Epidemiology and Global Health at the London School of Hygiene and Tropical Medicine (LSHTM) and Co-Director of the LSHTM-Malaria centre. She visited CRID in order to strengthen the collaboration between the Centre and LSHTM.

“I am very happy to be visiting CRID for the first time. For several months I have been waiting for this opportunity but was delayed by the pandemic. Finally I had the chance to visit, to see the facility, to know more about the work that is being carried out here as well as to discuss the collaboration of a new project between LSHTM and CRID known as Resilience Against Future Threats through Vector Control, specifically on Malaria and Arboviruses. The work here is very impressive and I look forward together with our team in London and our partners in Côte-d’Ivoire, Tanzania and Thailand to collaborate with the scientists at CRID. I wish everyone well and the best of success in your future researches” Prof Sian Clarke said.

Dr Judith Hedje at CRID

Dr Judith Hedje U.S. President Malaria Initiative (PMI) resident advisor visited CRID on October 21. With her colleague, they made a round visit of CRID’s laboratory. The visit permitted them to have an exchange with the institution and the whole team. As visitors, they were very impressed with the infrastructures. “We were very pleased with the researchers, the senior researchers, the postdocs and the fellows working here. We are looking forward to continue the collaboration” Dr Judith Hedje said.



Events

Royal Society of Tropical Medicine and Hygiene (RSTMH) Awards Prof Charles Wondji Honoured

On October, 08, 2021 Prof Charles Wondji, Professor of Genetics and Vector Biology, Liverpool School of Tropical Medicine (LSTM) and CEO of CRID was awarded Royal Society of Tropical Medicine and Hygiene (RSTMH’s) 2021 Chalmers Medal to recognise mentorship. “Greatly honoured to have been awarded the Chalmers Medal by the RSTMH” Prof Charles Wondji said. He seized this opportunity to send a “big thanks to all who made this possible at LSTM, CRID, Wellcome Trust and all the Research fellows across Africa!”

“Because all humans have the ability to perform to the highest level if given the right support and mentorship, capacity building of young scientists, notably from Disease Endemic Countries, is vital to improve global health.”

Charles Wondji, professor of vector biology and genetics, LSTM and Executive Director of the Centre for Research in Infectious Diseases, Cameroon



New initiatives

A Miseq to upgrade the level of research

CRID recently acquired a MiSeq sequencer from Illumina. The reason of this new acquisition has never been a secret. CRID wanted it in view of training the next generation of African scientists in the control of mosquito-borne diseases and more. This device helps in the capacity building of students & researchers in Cameroon and Africa to better understand the genomics of our common enemies: mosquitoes. Thus, this will help researchers mitigate innovative control strategies to help National Control Programs make evidence-based decisions vis-a-vis the control and elimination of these vectors. CRID organised a workshop on RNASeq. During these 3 days, participants were introduced to RNASeq and the main steps in conducting RNASeq analysis for differential expression. The workshop took place from the 7 -9 December, 2021 at CRID.

New year - New Goals

- Move to our new site at Odza
- Set up an operational Genomics centre
- Continue improving administrative and finance processes to obtain Silver GFGP certification
- Obtain more fundings